

Adposition Supersenses v2

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April 10, 2017

Abstract

This document describes an inventory of 50 semantic labels designed to characterize the use of adpositions and case markers at a somewhat coarse level of granularity. Version 2 is a revision of the supersense inventory proposed for English by [Schneider et al. \(2015, 2016\)](#) and documented in Prep-Wiki¹ (henceforth “v1”), which in turn was based on previous schemes. The present inventory was developed after extensive review of the v1 corpus annotations for English, as well as consideration of adposition and case phenomena in Hebrew, Hindi, and Korean. Examples in this document are limited to English; a multilingual and more detailed online lexical resource is forthcoming.

1 Overview

1.1 What counts as an adposition?

“Adposition” is the cover term for prepositions and postpositions. Briefly, we consider an affix, word, or multiword expression to be an adposition if it:

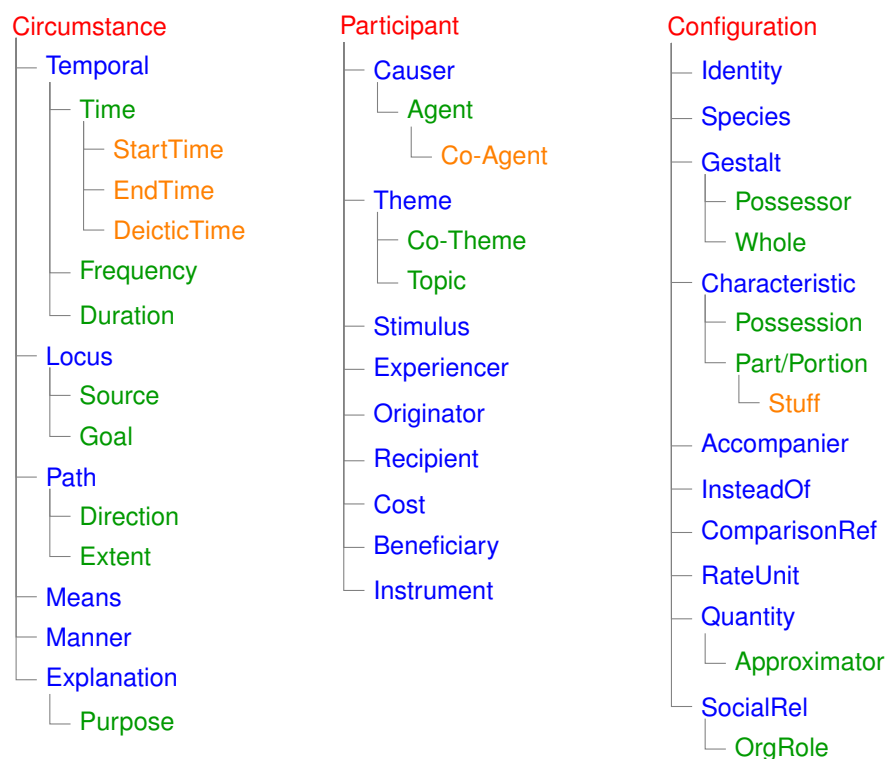
- Mediates a semantically asymmetric figure–ground relation between two concepts

¹<http://tiny.cc/prepwiki>

- Is a grammatical item that can mark an NP, and in some cases may mark clauses (as a subordinator) or be intransitive. We also include always-intransitive grammatical items whose core meaning is spatial and highly schematic, like English **together**, **apart**, and **away**.
- Is not a differential object marker (e.g., Hebrew **'et**, which marks direct objects if and only if they are definite).

1.2 Inventory

The v2 hierarchy is a tree with 50 labels. They are organized into three major subhierarchies: **CIRCUMSTANCE** (18 labels), **PARTICIPANT** (14 labels), and **CONFIGURATION** (18 labels).



- Items in the **CIRCUMSTANCE** subhierarchy are prototypically expressed as adjuncts of time, place, manner, purpose, etc. elaborating an event or entity.
- Items in the **PARTICIPANT** subhierarchy are prototypically entities functioning as arguments to an event.
- Items in the **CONFIGURATION** subhierarchy are prototypically entities or properties in a static relationship to some entity.

1.3 Limitations

This inventory is only designed to capture semantic relations with a figure–ground asymmetry. This excludes:

- The semantics of coordination, where the two sides of the relation are on equal footing, are not captured here. (Note that sometimes a morpheme can have symmetric as well as asymmetric interpretations: e.g., Korean **-wa**.)
- Aspects of meaning that pertain to information structure, discourse, or pragmatics.

Moreover, this inventory only captures semantic distinctions that tend to correlate with major differences in syntactic distribution. Thus, while there are labels for locative (**LOCUS**), ablative (**SOURCE**), allative (**GOAL**), and **PATH** semantics—and analogous temporal categories—finer-grained details of spatiotemporal meaning are for the most part lexical (viz.: the difference between *in the box* and *on the box*, or temporal **at**, **before**, **during**, and **after**) and are not represented here.²

1.4 Major changes from v1

Changes that affect only a single label are explained below the relevant v2 labels.

- **Removed multiple inheritance.** The v1 network was quite tangled. The structure is greatly simplified by analyzing some tokens as *construals* (Hwang et al., 2017).
- **Revised and expanded the **CONFIGURATION** subhierarchy.**
- **Removed the locative concreteness distinction.** In v1, labels **LOCATION**, **INITIALLOCATION**, and **DESTINATION** were reserved for concrete locations, and the respective supertypes **LOCUS**, **SOURCE**, and **GOAL** used to cover abstract locations. This distinction was found to be difficult and without apparent relevance to the English preposition system. The concrete labels were thus removed.
- **Removed the location/state/value distinction.** The v1 scheme attempted to make an elaborate distinction between values, states, and other kinds of abstract locations. However, the English preposition system does not seem particularly sensitive to these distinctions. (We are not aware of any prepositions that mark primarily values or primarily states; rather, productive metaphors allow locative prepositions to be extended to cover

²This is not to claim that all members of a category can be grammatical in all the same contexts: *on Saturday* and *at 5:00* are both labeled **TIME**, though the prepositions are by no means interchangeable in American English. We are simply asserting that the different constructions specific to days of the week versus times of the day are minor aspects of the grammar of English.

these, and there are cases where teasing apart abstract location vs. state vs. value is difficult.) Therefore, STATE, INITIALSTATE, ENDSTATE, VALUE, and VALUECOMPARISON were removed.

- **Revised the treatment of comparison and related notions.**
- **Greatly simplified the **PATH** subhierarchy.** See §2.3.
- **Simplified the **TEMPORAL** subhierarchy.** See §2.1.

2 CIRCUMSTANCE

Macrolabel for labels pertaining to space and time; abstract/metaphoric locations such as states; and other categories that usually constitute semantically non-core properties of events.

Rarely, CIRCUMSTANCE is used directly for:

- **Contextualization**

- (1) **In** arguing for tax reform, the president claimed that loopholes allow big corporations to profit from moving their headquarters overseas.
- (2) Bipartisan compromise is unlikely **with** the election just around the corner.

For these cases, the preposition helps situate the background context in which the main event takes place. The background context is often realized as a subordinate clause preceding the main clause.

- **Occasions**

- (3) I bought her a bike **for** Christmas.
- (4) I had peanut butter **for** lunch.

These simultaneously express a **TIME** and some element of causality similar to **PURPOSE**. But the PP is not exactly answering a *Why?* or *When?* question. Instead, the sentence most naturally answers a question like *On what occasion was X done?* or *Under what circumstances did X happen?*.

- Any other descriptions of event/state properties that are **insufficiently specified** to fall under spatial, temporal, causal, or other subtypes like **MANNER**.

2.1 TEMPORAL

Abstract supercategory for temporal descriptions: **when, for how long, how often, how many times**, etc. something happened or will happen.

History. The v1 category AGE (e.g., *a child of five*) was a mutual subtype of **TEMPORAL** and **ATTRIBUTE**. Being quite specific and rare, for v2 it was merged with **CHARACTERISTIC**. Combined with the changes to **TIME** subcategories (see below), this reduced by 3 the number of labels in the **TEMPORAL** subtree, bringing it to 7.

2.1.1 TIME

When something happened or will happen, in relation to a reference time or event.

- (5) We ate **in** the afternoon.
 at 2:00
 on Friday
- (6) Let's talk **at** lunch.
 during
- (7) I will finish **after** tomorrow.
 lunch
 you (do)
- (8) I will finish **by** tomorrow.
 lunch

The preposition **since** is ambiguous:

- (9) ['after'] I grew a beard—that was **since** the breakup. (**TIME**)
- (10) ['ever since'] I have loved you **since** the party where we met. (**STARTTIME**)
- (11) ['because'] I'll try not to whistle **since** I know that gets on your nerves. (**EXPLANATION**)

History. In v1, point-like temporal prepositions (**at, on, in, as**) were distinguished from displaced temporal prepositions (**before, after**, etc.) which present the two times in the relation as unequal. **RELATIVETIME** inherited from **TIME** and was reserved for the displaced temporal prepositions, as well as subclasses **STARTTIME**, **ENDTIME**, **DEICTICTIME**, and **CLOCKTIMECXN**.

For v2, **RELATIVETIME** was merged into **TIME**: the distinction was found to be entirely lexical and lacked parallelism with the spatial hierarchy. **CLOCKTIMECXN**

was also merged with TIME, the usages covered by the former (expressions of clock time like *ten of seven*) being exceedingly rare and not very different semantically from prepositions like **before**.

STARTTIME

When the event denoted by the governor begins.

Prototypical prepositions are **from** and **since** (but see note under TIME about the ambiguity of **since**):

- (12) a. The show will run **from** 10 a.m. to 2 p.m.
- b. a document dating **from** the thirteenth century

Note that simple TIME is used with verbs like *start* and *begin*: the event directly described by the PP is the starting, not the thing that started.

- (13) The show will start **at** 10 a.m. (TIME)

ENDTIME

When the event denoted by the governor finishes.

Prototypical prepositions are **to**, **until**, **till**, **up_to**, and **through**:

- (14) The show will run from 10 a.m. **to** 2 p.m.
- (15) Add the cider and boil **until** the liquid has reduced by half.
- (16) If we have survived **up_to** now what is stopping us from surviving in the future?
- (17) They will be in London from March 24 **through** May 7.

Note that simple TIME is used with verbs like *end* and *finish*: the event directly described by the PP is the ending, not the thing that ended.

- (18) The show will end **at** 2 p.m. (TIME)

DEICTICTIME

When an event took place or will take place, expressed with a measure of time that serves as an offset relative to the present time.

- (19) I ate 10 minutes **ago**.
 a while **back**
- (20) I will eat **in** 10 minutes.
 - a. ['for no more than 10 minutes' reading]: DURATION
 - b. ['10 minutes from now' reading]: DEICTICTIME

2.1.2 FREQUENCY

At what rate something happens or continues, or the instance of repetition that the event represents.

- (21) Guests were arriving **at** a steady clip.
- (22) The risk becomes worse **by** the day.
- (23) The camcorder failed **for** the third time.

Contrast: **RATE****UNIT**

2.1.3 DURATION

Indication of **how long** something lasts (with reference to an amount of time or time period/larger event that it spans).

- (24) I ate **for** 10 minutes.
- (25) I ate **in** [for no more than] 10 minutes. [see (20a)]
- (26) I ate **throughout** the night.
through
into

2.2 LOCUS

Location, condition, or value. May be abstract.

- (27) I like to sing **at** the gym .
in the shower
on Main St.
- (28) The cat is **on_top_of** the dog.
beside
near
- (29) the wheels **on** the bus
- (30) I read it **in** a book .
on a website
- (31) The charge is **on** my credit card.
- (32) We met **on** a trip to Paris.
- (33) The Dow is **at** a new high.
20,000

(34) I am now **off** work.

(35) She was **in** a coma.

In a phenomenon called **fictive motion** (Talmy, 1996), dynamic language may be used to describe static scenes. We use construal for these:

(36) A road runs **through** my property. LOCUS→PATH

(37) The road extends **to** the river. LOCUS→GOAL

(38) I saw him **from** the roof. LOCUS→SOURCE

2.2.1 SOURCE

Initial location, condition, or value. May be abstract.

Prototypical prepositions include **from**, **off**, **off_of**, and **out_of**:

(39) The cat jumped **off_of** the ledge.

off

from

(40) I got it **from** the internet.

off

(41) people **from** France

(42) The temperature is rising **from** a low of 30 degrees.

(43) I have arrived **from** work.

(44) She awoke **from** a coma.

came **out of**

SOURCE is prototypically inanimate, though it can be used to construe animate **PARTICIPANTS** (especially **ORIGINATOR** and **CAUSER**). Contrasts with **GOAL**.

2.2.2 GOAL

Final location (destination), condition, or value. May be abstract.

Prototypical prepositions include **to**, **for**, **toward(s)**, **into**, and **onto**:

(45) I ran **to** the store.

(46) The cat jumped **onto** the ledge.

(47) The temperature is rising **to** a high of 40 degrees.

- (48) I will leave **for** work.
 (49) She slipped **into** a coma.

English regularly allows canonically static locative prepositions to mark goals with motion verbs like *put*. We use the construal **GOAL**→**LOCUS**:

- (50) I put the lamp **next_to** the chair.
 (51) I'll just hop **in** the shower.
 (52) I put my CV **on** the internet.
 (53) The cat jumped **on** my face.

GOAL is prototypically inanimate, though it can be used to construe animate **PARTICIPANTS** (especially **RECIPIENT**). Contrasts with **SOURCE**.

2.3 **PATH**

An intermediate space between an initial position and a final position.

- (54) The bird flew **over** the building.
 (55) The sun traveled **across** the sky.
 (56) Hot water is running **through** the pipes.

See also: **INSTRUMENT**, **MANNER**

History. The v1 hierarchy distinguished many different subcategories of path descriptions. The labels TRAVERSED, 1DTRAJECTORY, 2DAREA, 3DMEDIUM, CONTOUR, VIA, TRANSIT, and COURSE have all been merged with **PATH** for v2.

2.3.1 **DIRECTION**

How motion or an object is aimed/oriented.

This is typically used for intransitive prepositions (sometimes classified as adverbs). There may or may not be an implicit **SOURCE** or **GOAL**:

- (57) The bird flew **up** .
 out
 away
 (58) The price shot **up**.

2.3.2 EXTENT

The size of a path.

This can be the physical distance traversed or the amount of change on a scale:

- (59) We ran **for** miles.
- (60) The price shot up **by** 10%.

2.4 MEANS

Secondary action or event that characterizes **how** the main event happens or is achieved.

Prototypically a volitional action, though not necessarily (64). A volitional **MEANS** will often modify an intended result, though the outcome can be unintended as well (63).

- (61) Open the door **by** turning the knob.
- (62) They retaliated **by** shooting .
with shootings
- (63) The owners destroyed the company **by** growing it too fast.
- (64) Chlorophyll absorbs the light **by** transfer of electrons.

MEANS is similar to **INSTRUMENT**, which is used for causally supporting entities and is a kind of **PARTICIPANT**.

Contrast with **EXPLANATION**, which characterizes **why** something happens. I.e., an **EXPLANATION** portrays the secondary event as the causal *instigator* of the main event, whereas **MEANS** portrays it merely as a *facilitator*.

History. In v1, **MEANS** was a subtype of **INSTRUMENT**, but with the removal of multiple inheritance for v2, the former was moved directly under **CIRCUMSTANCE** and the latter directly under **PARTICIPANT**.

2.5 MANNER

Description of **how** something happens or exists that does not directly invoke a location, path, or temporal or causal relation. Often the “style” of something.

- (65) The toddler is old enough to eat **by** herself.
- (66) The people shouted **with** pleasure.
- (67) They dance **in** a circle. (PATH \leadsto MANNER)
- (68) The sand is **in** a pyramid shape.
- (69) It was written **in** French.
- (70) music **in** C major

History. In v1, **MANNER** was positioned as an ancestor of all categories that license a *How?* question, including **INSTRUMENT**, **MEANS**, and **CONTOUR**, as in (67). This criterion was deemed too broad, so **MANNER** has no subtypes in v2.

2.6 EXPLANATION

Assertion of **why** something happens or is the case.

This marks a secondary event that is asserted as the reason for the main event or state.

- (71) I went outside **because_of** the smell.
- (72) The rain is **due_to** a cold front.
- (73) I will appoint him **as** he is most qualified for the job.
since

Question test: **EXPLANATION** and its subtype **PURPOSE** license *Why?* questions.

2.6.1 PURPOSE

Something that somebody wants to bring about, asserted to be why something was done, is the case, or exists.

Central usages of **PURPOSE** explain the motivation behind an action. Typically the governing event serves as a means for achieving or facilitating the **PURPOSE**. Prototypical markers include **for** and infinitive marker **to**:

- (74) a. He rose **to** make a grand speech.
- b. surgery **to** treat a leg injury
- (75) a. He rose **for** a grand speech.
- b. We hired a caterer **for** (the party) tonight.

Something directly manipulated/affected can stand in metonymically for the desired event:

- (76) a. I went to the store **for** eggs. [understood: ‘to acquire/buy eggs’]
- b. surgery **for** a leg injury [understood: ‘to treat a leg injury’]

In contrast to the above, where the governor denotes an *event*, an *entity* can be modified to explicate an intended use or affordance. Because this can be understood as a static property of the entity—why it was created or what it is useful for (part of its qualia structure)—we use the construal **CHARACTERISTIC**→**PURPOSE**:³

- (77) **CHARACTERISTIC**→**PURPOSE**:
- a. a shoulder **to** cry on
- b. The noose **for** the prisoner was too loose. [understood: ‘for use on the prisoner’]
- c. a good store **for** eggs [understood: ‘for acquiring/buying eggs’]
- d. a good book **to** give to young readers
- e. a good book **for** young readers [understood: ‘for giving to young readers’]

Question test: **EXPLANATION** and its subtype **PURPOSE**, when used adverbially, license *Why?* questions. **PURPOSE** usually licenses an *in order to* or *for the purpose of* paraphrase.

History. In v1, the usages illustrated in (77) were assigned a separate label, **FUNCTION**, which inherited from both **ATTRIBUTE** and **PURPOSE**. The ability to use construal removes the need for a separate label.

³In FrameNet as of v1.7, these sorts of purposes are labeled as **INHERENT_PURPOSE**. See, e.g., the example “MONEY [to support yourself and your family]” in the **Money** frame (<https://framenet2.icsi.berkeley.edu/fnReports/data/lu/lu13361.xml?mode=annotation>).

3 PARTICIPANT

Thing, usually an entity, that plays a causal role in an event.

Not used directly—see subtypes.

3.1 CAUSER

Instigator of, and a core participant in, an event.

CAUSER is applied directly to inanimate things or forces conceptualized as entities. Prototypical prepositions are **by** (prominently including passive-**by**) and **of**:

- (78) the devastation of the town wreaked **by** the fire
- (79) the devastation **of** the fire

The **CAUSER** is sometimes construed as a **SOURCE**:

- (80) a. the devastation **from** the fire (**CAUSER**→**SOURCE**)
b. fatalities **from** cancer (**CAUSER**→**SOURCE**)
c. FDR suffered **from** polio. (**CAUSER**→**SOURCE**)

See also: **INSTRUMENT**

3.1.1 AGENT

Animate instigator of an action (typically volitional).

Prototypical prepositions are **by** (prominently including passive-**by**) and **of**:

- (81) the decisive vote **by** the City Council
of

When two symmetric **AGENTS** are collected in a single NP functioning as a set, it is marked as a **WHOLE** construal:

- (82) There was a war **between** France and Spain. (**AGENT**→**WHOLE**)
- (83) This is a discussion **among** friends. (**AGENT**→**WHOLE**)

Compare: **CO-AGENT**; see also: **ORGRole**, **ORIGINATOR**, **STIMULUS**

Co-AGENT

Second semantically core participant that would otherwise be labeled **AGENT**, but which is adpositionally marked in contrast with an **AGENT** occupying a non-oblique syntactic position (subject or object). Typically, the **AGENT** and **Co-AGENT** engage in the event in a reciprocal fashion.

- (84) I fought in a war **against** the Germans.
(85) I talked **with** my roommate about cleaning duties.
argued

See also: **ACCOMPANIER**, **SOCIALREL**

3.2 THEME

Undergoer that is a semantically core participant in an event or state, and that does not meet the criteria for any other label.

Prototypical **THEMES** undergo (nonagentive) motion, are transferred, or undergo an internal change of state (sometimes called *patients*). Adpositional **THEMES** are usually construed as something else:

- (86) Fill the bowl **with** water. (**THEME**→**INSTRUMENT**)
(87) The mechanic made a repair **to** the engine. (**THEME**→**GOAL**)
(88) a. Sheldukher searched **for** his laser pistol. (**THEME**→**GOAL**)
fumbled
b. There is a significant demand **for** new housing. (**THEME**→**GOAL**)
c. They charge higher prices **for** goods bought by credit card. (**THEME**→**GOAL**)
(89) a. the price **of** tea in China (**THEME**→**GESTALT**)
b. the approach **of** the waves
c. the death **of** a salesman
murder
(90) a. The mechanic worked **on** the engine.
b. We noshed **on** snacks.
c. Students spend a lot of money **on** textbooks.
(91) a. There was an increase **in** oil prices.
b. I'm covered **in** bees! (**THEME**→**LOCUS**)
(92) a. The training saved us **from** almost certain death. (**THEME**→**SOURCE**)

- b. They prevented us **from** boarding the plane. (THEME \rightsquigarrow SOURCE)

When two symmetric undergoers are collected in a single NP functioning as a set, it is marked as a **WHOLE** construal:

- (93) There was a collision in mid-air **between** two light aircraft. (THEME \leadsto WHOLE)
- (94) Links **between** science and industry are important. (THEME \leadsto WHOLE)

History. In v1, following many thematic role inventories, PATIENT was a distinct label for undergoers that were affected (undergoing an internal change of state). It was merged into THEME for v2 because the affectedness criterion can be subtle and difficult to apply.

Compare: Co-THEME

3.2.1 Co-THEME

Second semantically core undergoer that would otherwise be labeled **THEME**, but which is adpositionally marked in contrast with a **THEME** occupying a non-oblique syntactic position (subject or object).

- (95) They replaced my old tires **with** new ones.

History. In v1, CO-PATIENT was a distinct label, and the two shared a common supertype, CO-PARTICIPANT. See note at [THEME](#).

See also: [INSTEADOF](#), [CO-AGENT](#)

3.2.2 TOPIC

Information content or subject matter in communication or cognition.

Prototypical prepositions are **about** and **on**:

- (96) I gave a presentation **about** politics.
on
- (97) Try not to think **about** it.

Less prototypical **TOPIC** markers include:

- (98) Are you interested **in** politics?
- (99) I was accused **of** treason.
- (100) I'm an expert **at** cooking.
talented

See also: **STIMULUS**

3.3 **STIMULUS**

That which is perceived or experienced (bodily, perceptually, or emotionally).

STIMULUS does not seem to have any prototypical adposition in the languages we have looked at. In English, it can be construed in several ways:

- (101) My affection **for** you (**STIMULUS**→**BENEFICIARY**)
- (102) Scared **by** the bear (**STIMULUS**→**CAUSER**)
- (103) I startled **at** the noise (**STIMULUS**→**GOAL**)
- (104) I care **about** you (**STIMULUS**→**TOPIC**)

Counterpart: **EXPERIENCER**

3.4 **EXPERIENCER**

Animate who is aware of a bodily experience, perception, emotion, or mental state.

EXPERIENCER does not seem to have any prototypical adposition in the languages we have looked at. In English, it can be construed in several ways:

- (105) The anger **of** the students (**EXPERIENCER**→**POSSESSOR**)
- (106) Running is enjoyable **for** me (**EXPERIENCER**→**BENEFICIARY**)
- (107) It feels hot **to** me (**EXPERIENCER**→**GOAL**)

Elsewhere, the term *cognizer* is sometimes used for one whose mental state is described.

Counterpart: **STIMULUS**

3.5 ORIGINATOR

Animate who is the initial possessor or creator/producer of something, including the speaker/communicator of information. Excludes events where transfer/communication is not framed as unidirectional.

A “source” in the broadest sense of a starting point/condition. Contrasts with **RECIPIENT** if there is transfer/communication.

Typically construed as **AGENT** (with *give, tell, talk to, create*: subject or passive-**by**; adnominal **by** as in *works by Shakespeare*) or **SOURCE** (*obtain/hear from*; adnominal **of** as in *works of Shakespeare*). Occasionally construed as **THEME** (*rob her of her life savings*: direct object).

Does not apply to events like *exchange, talk/chat with, or negotiate*, which involve a back-and-forth between **AGENT** and **CO-AGENT** (or a plural **AGENT**).

History. **ORIGINATOR** merges v1 labels **DONOR/SPEAKER** and **CREATOR**, which were difficult to distinguish in the case of authorship. **DONOR/SPEAKER** was a subtype of **INITIALLOCATION**, which inherited from **LOCATION** and **SOURCE**. **CREATOR** was a subtype of **AGENT**. Moving **ORIGINATOR** directly under **PARTICIPANT** puts it in a neutral position with respect to its possible construals.

3.6 RECIPIENT

Animate who is the (actual or intended) final possessor of a thing or message. Excludes events where transfer/communication is not framed as unidirectional.

A “goal” in the broadest sense of an ending point/condition. Contrasts with **ORIGINATOR**.

Typically construed as **GOAL** (*give/talk to*), **AGENT** (with *receive*: subject or passive-**by**), or **THEME** (with *inform*: direct object).

Does not apply to events like *exchange, talk/chat with, or negotiate*, which involve a back-and-forth between **AGENT** and **CO-AGENT** (or a plural **AGENT**).

History. In v1, **RECIPIENT** was the counterpart to **DONOR/SPEAKER**; **RECIPIENT** was a subtype of **DESTINATION**, which inherited from **LOCATION** and **GOAL**. Moving **RECIPIENT** directly under **PARTICIPANT** puts it in a neutral position with respect to its possible construals.

3.7 COST

An amount (typically of money) that is linked to an item or service that it pays for/could pay for, or given as the amount earned or owed.

The governor may be an explicit commercial scenario:

(108) I bought the book **for** \$10.

sold

(109) The book is priced **at** \$10.

valued

(110) I got a refund **of** \$10.

Or the **COST** may be specified as an adjunct with a non-commercial governor:

(111) You can ride the bus **for** free.

\$1

COST is *not* used with general scenes of possession or transfer, even if the thing possessed or transferred happens to be an amount of money:

(112) I bestowed the winner **with**_{CO-THEME} \$100.

History. This category was not present in v1, which had the broader category VALUE. VerbNet (Kipper et al., 2008; Palmer et al., 2017) has a similar category called ASSET; we chose the name **COST** to emphasize that it describes a relation rather than an entity type (it does not apply to money with a verb like *possess* or *transfer*, for instance).

3.8 BENEFICIARY

Animate or personified undergoer that is (potentially) advantaged or disadvantaged by the event or state.

This label does not distinguish the polarity of the relation (helping or hurting, which is sometimes termed *maleficiary*).

(113) Vote **for** Pedro!

against

(114) Junk food is bad **for** your health.

(115) My parrot died **on** me.

3.9 INSTRUMENT

An entity that facilitates an action by applying intermediate causal force.

Prototypically, an **AGENT** intentionally applies the **INSTRUMENT** with the purpose of achieving a result:

- (116) a. I broke the window **with** a hammer.
b. I destroyed the argument **with** my words.

Less prototypically, the action could be unintentional:

- (117) I accidentally poked myself in the eye **with** a stick.

The key is that the **INSTRUMENT** is not sufficiently “independently causal” to instigate the event.

However, to downplay the agency of the individual operating the instrument, the instrument can be placed in a passive **by**-phrase, which construes it as the instigator:

- (118) a. The window was broken **by** the hammer. (**INSTRUMENT**→**CAUSER**)
b. My headache was alleviated **by** aspirin. (**INSTRUMENT**→**CAUSER**)

Note that the examples in (118) can be rephrased in active voice with the **INSTRUMENT** as the subject.

A device serving as a mode of transportation or medium of communication counts as an **INSTRUMENT**, but is often construed as a **LOCUS** or **PATH**:

- (119) Communicate **by** phone. (**INSTRUMENT**)
email
(120) Talk **on** the phone. (**INSTRUMENT**→**LOCUS**)
(121) Send it **over** email. (**INSTRUMENT**→**PATH**)
via
(122) Travel **by** train. (**INSTRUMENT**)
(123) Escape **with** a getaway car. (**INSTRUMENT**)
(124) Escape **in** the getaway car. (**INSTRUMENT**→**LOCUS**)

This includes some expressions which incorporate the **INSTRUMENT** in a noun:

- (125) ride **on** horseback (**INSTRUMENT**→**LOCUS**)
(126) hold **at** knifepoint (**INSTRUMENT**→**LOCUS**)

Other non-prototypical instruments that can be construed as paths include waypoints from **SOURCE** to **GOAL**, and people that serve as intermediaries:

(127) We flew to London **via** Paris. (**INSTRUMENT**~**PATH**)

(128) I found out the news **via** Sharon. (**INSTRUMENT**~**PATH**)

Conversely, roadways count as **PATHS** but can be construed as **INSTRUMENTS**:

(129) Escape **through** the tunnel. (**PATH**)

(130) Escape **by** tunnel. (**PATH**~**INSTRUMENT**)

Compare **MEANS**, which is used for facilitative events rather than entities.

4 **CONFIGURATION**

Thing, usually an entity or property, that is involved in a static relationship to some other entity.

Not used directly—see subtypes.

4.1 **IDENTITY**

A category being ascribed to something, or something belonging to the category denoted by the governor.

Prototypical prepositions are **of** (where the governor is the category) and **as** (where the object is the category):

(131) the state **of** Washington [as opposed to the city]

(132) The liberal state **of** Washington has not been receptive to Trump's message.

(133) **As** a liberal state, Washington has not been receptive to Trump's message.

(134) I like Bob **as** a colleague. [but not as a friend]

(135) What a gem **of** a restaurant! [exclamative idiom: both NPs are indefinite]

(136) the idea **of** opening a new business
task

hassle
(137) the topic **of** semantics
issue

Something may be specified with a category in order to disambiguate it (131), or to provide an interpretation or frame of reference with which that entity is to be considered. In some cases, like (137), the category is a *shell noun* (Schmid, 2000) requiring further specification.

Categorizations may be situational rather than permanent/definitional:

- (138) a. She appears **as** Ophelia in *Hamlet*.
 b. He is usually a bartender, but today he is working **as** a waiter.

Paraphrase test: “(thing) IS (category) [in the context of the event]”: “Washington is a liberal state”, “opening a new business is a hassle”, “She is Ophelia”, etc. Note that **as**+category may attach syntactically to a verb, as in (134) and (138), rather than being governed by the item it describes.

History. Generalized from v1, where it was called INSTANCE and restricted to the “(category) **of** (thing)” formulation. The relevant usages of **as** were labeled ATTRIBUTE.

4.2 SPECIES

A category qualified by *sort*, *type*, *kind*, *species*, *breed*, etc. Includes *variety*, *selection*, *range*, *assortment*, etc. meaning ‘many different kinds’.

- (139) that sort **of** business
 (140) A good type **of** ant to keep is the red ant .
 (141) certain strains **of** *Escherichia coli*
 (142) Modern breeds **of** these homing pigeons return reliably
 (143) Some poor sap applied the wrong brand **of** paint
 (144) This store offers a wide selection **of** footstools

SPECIES is *not* used if the sort/variety noun is the object rather than the governor:

- (145) a business **of** CHARACTERISTIC that sort

4.3 GESTALT

Generalized notion of “whole” understood with reference to a component part, possession, set member, or characteristic. See **CHARACTERISTIC**.

GESTALT applies directly to:

- The holder of a property if the property is the governor:

- (146) a. the blueness **of** the sky
b. the wisdom **of** the crowd
c. the time **of** the party
d. the amount **of** time allowed [but see (195)]

- The wearer of attire:

(147) the uniforms **of** the children

(148) the shirt **on** him (**GESTALT**→**LOCUS**)

- Anything that is borderline between subcategories **POSSESSOR** and **WHOLE**
See also: **QUANTITY**

4.3.1 POSSESSOR

Animate who **has** something (the **POSSESSION**) which is not part of their body or inherent to their identity/character but could, in principle, be taken away.

Prototypically expressed with **of**:

(149) the money **of** the rich

See **SOCIALREL**.

4.3.2 WHOLE

Something described with respect to its part, portion, subevent, subset, or set element. See **PART/PORTION**.

- (150) a. The new engine **of** the car
b. The flaxen hair **of** the girl
c. The 3 layers **of** the cake

- d. The 3 prongs **of** the strategy
 - e. The remainder **of** the cake
rest
 - f. The tastiest bit **of** the cake
 - g. The tennis matches **of** a series
 - h. The interior **of** the shopping bag
 - i. The south (region) **of** France
 - j. The beginning **of** the party
- (151) a. The tennis matches **in** a series (WHOLE \rightsquigarrow LOCUS)
 b. The new engine **in** the car (WHOLE \rightsquigarrow LOCUS)
 c. the escape key **on** the keyboard (WHOLE \rightsquigarrow LOCUS)
 d. The clothes **in** the pile (WHOLE \rightsquigarrow MANNER)
- (152) Sets and ratios:
- a. This is one **of** the worst restaurants in town. (WHOLE)
better
 - b. 2 **in** 10 American children are redheads. (WHOLE \rightsquigarrow LOCUS)
 - c. 2 **out_of** 10 American children are redheads. (WHOLE \rightsquigarrow SOURCE)
 - d. **Out_of** the 10 children in the class, only Mary is a redhead. (WHOLE \rightsquigarrow SOURCE)
 - e. **Among** the 10 children in the class, only Mary is a redhead. (WHOLE)

If the governor narrows the reference to a certain amount of the **WHOLE**, the construal **QUANTITY \rightsquigarrow WHOLE** is used—see (197). Note that this only applies if the governor is a measure term; it does not apply to distinctive parts like “layers” (150c) and “prongs” (150d), even if a count is specified.

Used to construe geographic and temporal “containers”:

- (153) Famous castles **of** the valley (LOCUS \rightsquigarrow WHOLE)
- (154) a. the 15th **of** March (TIME \rightsquigarrow WHOLE)
Ides
 b. March **of** 44 BC (TIME \rightsquigarrow WHOLE)

The prepositions **between** and **among** can impose **WHOLE** construals by combining two or more items in the object NP (contrast with (152e)):

- (155) The negotiations **between** the parties went well. (AGENT \rightsquigarrow WHOLE)
among
- (155') The negotiations **by** the parties went well. (AGENT)

4.4 CHARACTERISTIC

Generalized notion of a part, feature, possession, or the contents or composition of something, understood with respect to that thing (the **GESTALT**).

Can be used to construe person-to-person relationships such as kinship, whose scene role should be **SOCIALREL**. Labels **POSSESSION**, **PART/PORTION**, and its subtype **STUFF** are defined for some important subclasses.

CHARACTERISTIC applies directly to:

- A property value:

- (156) a. a car **of** high quality
b. a man **of** honor
c. a business **of** that sort [contrast with SPECIES, §4.2]

- Attire:

- (157) the kid **with** a vest (on)
- (158) the kid **in** a vest (CHARACTERISTIC \rightsquigarrow LOCUS)

- Role of a complex frame **GESTALT** that has no obvious decomposition into parts:

- (159) a. the restaurant **with** a convenient location
an extensive menu
b. a party **with** great music

- That which is located in a container denoted by the governor:

- (160) a room **with** 2 beds

- Anything that is borderline between subcategories **POSSESSION** and **PART/-PORTION**

Typically, one of “**GESTALT** {HAS, CONTAINS} **CHARACTERISTIC**” is entailed. This does not help to distinguish subtypes.

History. The v1 label ATTRIBUTE was intended to apply to features of something, but was rather squishy.

4.4.1 POSSESSION

That which some **POSSESSOR** (animate or personified, e.g. an institution) **has**, and which is not part of their body or inherent to their identity/character but could, in principle, be taken away.

Sometimes called *alienable* possession. The possession may be concrete or abstract, and temporary or permanent. Excludes attire: see **CHARACTERISTIC**.

Prototypical prepositions are **with** and **without**:

- (161) People **with** money

Immediate concrete possession uses an **ACCOMPANIER** construal:

- (162) Hagrid exited the shop **with** (= carrying) a snowy owl. (**POSSESSOR** \rightsquigarrow **ACCOMPANIER**)

Paraphrase test: “**POSSESSOR POSSESSES POSSESSION**”, or “**POSSESSOR** is IN POSSESSION OF **POSSESSION**”. The latter is especially appropriate for immediate concrete possession.

4.4.2 PART/PORTION

A part, portion, subevent, subset, or set element (e.g., an example or exception) of some **WHOLE**.

Anything directly labeled with **PART/PORTION** is understood to be **incomplete** relative to the **WHOLE**. This includes body parts and partial food ingredients.

Prototypical prepositions include **with**, **without**; **such as**, **like** for exemplification; and **but**, **except**, **except_for** for exceptions:

- (163) a. A car **with** a new engine
b. A strategy **with** 3 prongs
c. The girl **with** flaxen hair
d. A man **with** a wooden leg named Smith
e. A valley **with** a castle
f. A quintet **with** 2 cellos
g. A performance **with** a guitar solo
h. A cake **with** 3 layers
i. A sandwich **with** wheat bread

- j. Soup **with** carrots (in it)
- k. A chicken sandwich **with** ketchup (on it)
- (164) Bread **without** gluten
- (165) Strategies **such as** divide-and-conquer
- (166) Everyone **except** Bob plays trombone.

Some can be paraphrased with INCLUDES, but this is not determinative.

STUFF

The members comprising a group/ensemble, or the material comprising some unit of substance. **STUFF** is distinguished from other instances of **PART/PORTION** in fully covering (or “summarizing”) the aggregate whole.

Paraphrase test: “**WHOLE** CONSISTS OF **STUFF**”

- (167) a. A flock **of** birds
- b. A throng **of** tourists
- c. A clump **of** sand
- d. A piece **of** wood
- e. A series **of** tennis matches
- f. An evening **of** Brahms
- g. A meal **of** salmon
- (168) A salad **of** mixed greens
- with**
- (169) This bottle is **of** beer (and that one is of wine). [but see (187)]
- (170) **ORGRole**~>**STUFF**:
- a. An order **of** nuns
- b. A chamber group **of** 5 players
- with**

See also: **QUANTITY**

STUFF has no specific counterpart under **WHOLE**.

4.5 ACCOMPANIER

Entity that another entity is together with.

Sometimes called *comitative*.

Prototypical prepositions are **with**, **without**, **along_with**, **together_with**, and **in_addition_to**:

(171) I'll have soup **with** salad.

without

(172) She'll be **with** us in spirit.

For an “extra participant” in an activity, where two parties perform the activity together (but the nature of the activity would not fundamentally change if they each performed it independently), a **CO-AGENT** construal is used:

(173) Do you want to walk **with** me? (**ACCOMPANIER**→**CO-AGENT**)

By contrast, if the nature of the scene fundamentally requires multiple participants, simple **CO-AGENT** is used. Often there is ambiguity:⁴

(174) Do you want to talk **with** me?

a. [*The reading*: Should we have a conversation?] (**CO-AGENT**)

b. [*The reading*: Do you want to join me in talking to a third party?] (**ACCOMPANIER**→**CO-AGENT**)

(175) I fought **with** them to reform the regulation.

a. [*The reading*: I fought against them.] (**CO-AGENT**)

b. [*The reading*: I was on the same side as them.] (**ACCOMPANIER**→**CO-AGENT**)

If the object denotes a item that the governor has on hand in their possession, then the construal **POSSESSION**→**ACCOMPANIER** is used:

(176) I walked in **with** an umbrella. (**POSSESSION**→**ACCOMPANIER**)

See also: **INSTRUMENT**, **MANNER**

⁴Adding **together** seems to favor the (b) readings: *I fought **together_with** them*, *We fought **together*** can only mean we were on the same side. Contrastive stress can also force one reading: *I fought **WITH** them (not **AGAINST** them)*.

4.6 **INSTEADOF**

A default or already established thing for which something else stands in or is chosen as an alternative.

- (177) I ordered soup **instead_of** salad.
 rather_than
- (178) **Instead_of** ordering salad, I ordered soup.
- (179) The new shirts were gray **instead_of** black.
- (180) They substituted my old tires **for** new ones.
 swapped

May be construed spatially:

- (181) I chose soup **over** salad. (**INSTEADOF** \leadsto **LOCUS**)

See also: **ACCOMPANIER**, **COMPARISONREF**, **CO-THEME**

4.7 **COMPARISONREF**

The reference point in an explicit comparison (or contrast), i.e., an expression indicating that something is **similar/analogous to**, **different from**, or **the same as** something else.

The marker of the “something else” (the ground in the figure–ground relationship) is given the label **COMPARISONREF**:

- (182) a. She is taller **than** me.
 b. She is taller **than** I am.
 c. She is taller **than** she is wide.
 d. She is better at math **than** at drawing.
 e. The shirt is more gray **than** black.
- (183) a. She is as tall **as** I am.
 b. Your face is as_{**CHARACTERISTIC**} red **as** a rose.
 c. Your face is red **as** a rose.
 d. Your surname is the_same **as** mine.
- (184) Harry had never met anyone quite **like** Luna.
- (185) It was **as_if** he had insulted my mother.
 like

Prototypical prepositions include **than**, **as** (including the second item in the **as-as** construction), **like**, **unlike**. Prominent construals are **to** (GOAL for similar-thing) and **from** (SOURCE for dissimilar-thing).

Unit of measure in a rate expression.

(186) a. The cost is \$10 **per** item.
b. A fuel efficiency of 40 miles **per** gallon (of gas)

History. In v1, this fell under VALUE.

Something measured by a quantity denoted by the governor.

(191) This cake has thousands **of** sprinkles.

(192) They number in the tens **of** thousands.

(193) a. I have a number **of** students.

handful

b. I have a lot **of** students.

c. We did a lot **of** traveling.

d. There is a lot **of** wet sand on the beach.

(194) A pair **of** shoes

- If the measure includes a word like “amount”, “quantity”, or “number”,⁵ the construal **QUANTITY**→**GESTALT** is used (because the amount of something can be viewed as an attribute):

(195) **QUANTITY**→**GESTALT**:

a. A generous amount **of** time

b. A large number **of** students

But if “amount”, “quantity”, etc. is used without a measure as its modifier, it is simply **GESTALT**: see (146d).

- If the governor is a **collective noun**, the construal **QUANTITY**→**STUFF** is used (note that a “consisting of” paraphrase is possible):

(196) **QUANTITY**→**STUFF**:

a. Can you outrun a herd **of** wildebeest?

b. Put 3 bales **of** hay on the truck.

c. A group **of** vacationers just arrived.

2 groups

A throng

- Otherwise, if the object refers to a **specific item or set**, and the quantity measures a portion of that item (whether a quantifier, absolute measure, or fractional measure), the construal **QUANTITY**→**WHOLE** is used:

(197) **QUANTITY**→**WHOLE**:

a. I ate 6 ounces **of** the cake in the refrigerator.

b. I ate half **of** the cake.

50%

c. All/many/lots/a lot/ **of** the town’s residents are students.

some/few/both/none

d. I have seen all **of** the city. (= the whole city)

e. A lot **of** the sand on the beach is wet.

⁵Excluding the expression “a number” meaning ‘several’, as in (193a).

- f. 2 **of** the children are redheads.
- g. 2 **of** the 10 children in the class are redheads.

However, simple **WHOLE** is used if the portion is specified as “the rest”, “the remainder”, etc., as in (150e).

4.9.1 **APPROXIMATOR**

An “operator” that semantically takes a measurement, quantity, or range as an argument and “transforms” it in some way into a new measurement, quantity, or range.

For instance:

- (198) We have **about** 3 eggs left.
- (199) We have **in_the_vicinity_of** 3 eggs left.
- (200) We have **over** 3 eggs left.
- (201) We have **between** 3 and 6 eggs left.

Similarly for **around**, **under**, **more_than**, **less_than**, **greater_than**, **fewer_than**, **at_least**, and **at_most**.⁶

4.10 **SOCIALREL**

Entity, such as an institution or another individual, with which an individual has a stable affiliation.

Typically, **SOCIALREL** applies directly to relations between individuals. It does not have any prototypical adpositions. Construals include:

- (202) a. I work **with** Michael. (**SOCIALREL**→**CO-AGENT**)
- b. Joan has a class **with** Miss Zarves. (**SOCIALREL**→**CO-AGENT**)
- (203) a. Joan is the sister **of** John. (**SOCIALREL**→**POSSESSOR**)
- wife
- b. Joan is a student **of** Miss Zarves. (**SOCIALREL**→**POSSESSOR**)
- (204) Joan is studying **under** Prof. Smith. (**SOCIALREL**→**LOCUS**)

⁶These constructions are markedly different from most PPs; it is even questionable whether these usages should count as prepositions. Without getting into the details here, even if their syntactic status is in doubt, we deem it practical to assign them with a semantic label in our inventory because they overlap lexically with “true” prepositions.

(205) Joan is married **to** John. (SOCIALREL→GOAL)

Note, however, that *work with* is ambiguous between being in an established professional relationship (202a), and engaging temporarily in a joint productive activity:

(206) I was working **with** CO-AGENT Michael after lunch.

It is up to annotators to decide from context which interpretation better fits the context.

History. Renamed from v1 label PROFESSIONALASPECT, which was borrowed from Srikumar and Roth (2013a,b). The name SOCIALREL reflects a broader set of stative relations involving an individual in a social context, including kinship and friendship. See also note under ORGROLE.

4.10.1 ORGROLE

Organization or institution with which an individual has a stable affiliation, such as membership or a business relationship.

Like its supertype SOCIALREL, ORGROLE lacks any prototypical adposition, but participates in numerous construals:

- (207) a. the chairman **of** the board (ORGROLE→GESTALT)
b. the president **of** the U.S. (ORGROLE→GESTALT)
c. I am a loyal customer **of** Graeter's. (ORGROLE→GESTALT)
d. employees **of** Grunnings (ORGROLE→GESTALT)
- (208) Mr. Dursley works **for** Grunnings. (ORGROLE→BENEFICIARY)
- (209) Mr. Dursley works **at** Grunnings. (ORGROLE→LOCUS)
- (210) Mr. Dursley is **from** Grunnings. (ORGROLE→SOURCE)
- (211) Mr. Dursley is **with** Grunnings. (ORGROLE→ACCOMPANIER)
- (212) Mr. Dursley is employed **by** Grunnings. (ORGROLE→AGENT)
- (213) I bank **with** TSB. (ORGROLE→ACCOMPANIER)
- (214) I serve **on** the committee. (ORGROLE→LOCUS)

A family counts as an institution construed as a WHOLE (set of its members) or as a LOCUS:

- (215) I am the baby **of** the family. (ORGROLE→WHOLE)

(216) people **in** my family (**ORGROLE**→**LOCUS**)

For a relation between a unit and a larger institution, use **WHOLE**:

(217) the Principals Committee **of** **WHOLE** the National Security Council

See also: **STUFF**

History. **ORGROLE** is now distinguished within the broader **SOCIALREL** category following the precedent of the Abstract Meaning Representation (AMR; Banarescu et al., 2013, 2015). In AMR, have-org-role-91 captures relations between an individual and an institution (such as an organization or family), whereas have-rel-role-91 is used for relations between two individuals.

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